

Geometry

Name

Answer Key

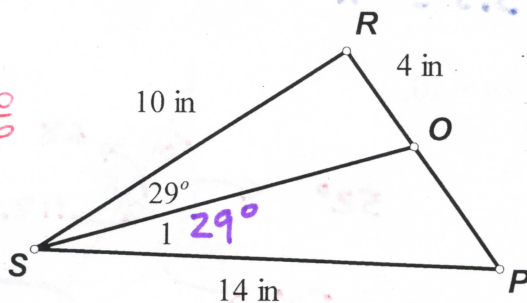
Unit 5 Worksheet 4 Angle Bisectors

Period _____ Date _____

1.) An angle bisector BISECTS an angle. This means that the angle bisector divides the angle into TWO CONGRUENT ANGLES.

2.) The point where all the angle bisectors meet is called the IN CENTER.

3.) \overline{SO} is an angle bisector of $\angle RSP$. Solve for $m\angle 1$ and OP .



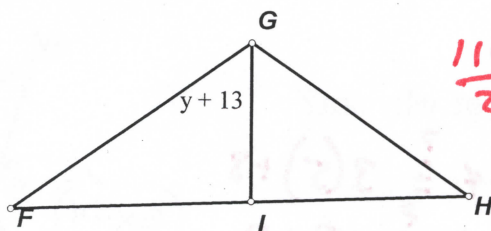
$$\frac{SR}{SP} = \frac{RO}{OP}$$

$$\frac{10}{14} = \frac{4}{OP}$$

$$m\angle 1 = 29^\circ$$

$$OP = 5.6$$

4.) If \overline{GI} is an angle bisector and $\angle FGH = 110^\circ$, find y and $m\angle FGI$.



$$\frac{110}{2} = 55$$

$$m\angle FGI = 55^\circ$$

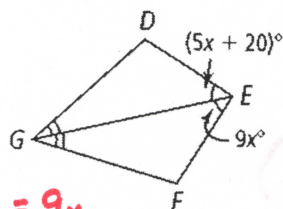
$$y + 13 = 55$$

$$y = 42$$

$$y = 42$$

For numbers 5-8, solve for x .

5.)



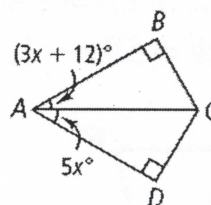
$$5x + 20 = 9x$$

$$20 = 4x$$

$$5 = x$$

$$x = 5$$

6.)



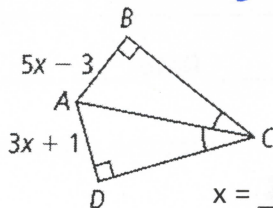
$$3x + 12 = 5x$$

$$12 = 2x$$

$$6 = x$$

$$x = 6$$

7.)



$$5x - 3 = 3x + 1$$

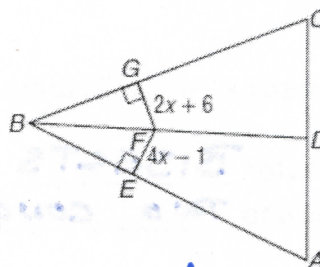
$$2x - 3 = 1$$

$$2x = 4$$

$$x = 2$$

$$x = \underline{\quad 2 \quad}$$

8.)



$$2x + 6 = 4x - 1$$

$$6 = 2x - 1$$

$$7 = 2x$$

$$3.5 = x$$

$$x = \underline{\quad 3.5 \quad}$$

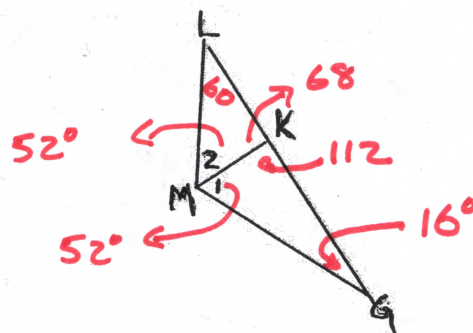
- 9.) In $\triangle LMG$, is MK an angle bisector, $m\angle 1 = 2n + 10$, $m\angle 2 = 4n - 32$ and $m\angle L = 60$. Find $m\angle G$.

$$2n + 10 = 4n - 32$$

$$10 = 2n - 32$$

$$42 = 2n$$

$$21 = n$$



10.)

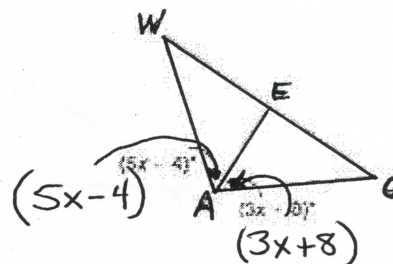
If $x = 5$, is AE an angle bisector? Why or why not?

NOT
A BISECTOR

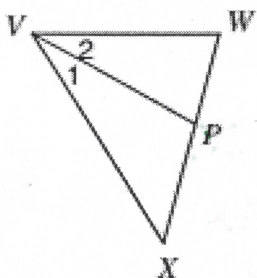
$$5(5) - 4 \stackrel{?}{=} 3(5) + 8$$

$$25 - 4 \stackrel{?}{=} 15 + 8$$

$$21 \neq 23$$



- 11.) Find x if $m\angle 2 = 1 + 28x$ and $m\angle XVW = 59x - 1$.



$$\angle XVW = 2 \cdot (\angle 2)$$

$$59x - 1 = 2(1 + 28x)$$

$$59x - 1 = 2 + 56x$$

$$3x - 1 = 2$$

$$3x = 3$$

$$x = 1$$